

W4

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/540,166	ROSENBERG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Vincent E Kovalick	2673	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1. ☒ This communication is responsive to applicant's amendment dated 10/26/04.
- 2. ☒ The allowed claim(s) is/are 4-7, 10, 12-14 and 18-22.
- 3. ☐ The drawings filed on 31 March 2000 are accepted by the Examiner.
- 4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    - 1. ☐ Certified copies of the priority documents have been received.
    - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

- 5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  - 6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
- 7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

## DETAILED ACTION

### *Response to Amendment*

1. This Office Action is in response to Applicant's Amendment, dated October 26, 2004, in response to USPTO Office Action dated July 29, 2004.

The cancellation of claims 1-3, 8-9, 11, 15-17 and 23-24 and the amendments to claims 4-7, 10 and 18-22 are sufficient to place the application in a condition for allowance.

### *Allowable Subject Matter*

2. Claims 4-7, 10, 12-14, and 18-22 allowed.

3. The following is an examiner's statement of reasons for allowance:

Regarding claims 4 and 10, the major difference between the teachings of the prior art of record (USP 5,136,695, Goldschlag et al.; USP 5,990,852, Szamrej and USP 5,574,836, Broemmelsiek) and that of the instant invention is that said prior art of record **does not teach** a system to refresh a display comprising a memory to store images of an image frame in a plurality of memory pages, the frame is divided into tiles representing two-dimensional regions of the image frame each of the tiles is stored in one separate memory page; a processor to perform drawing operations to generate the images for the image frame, the processor marking memory pages corresponding to regions of the image frame that have been updated while performing the drawing operations; and a display controller in communication with the memory to access the image frame and to send only the marked memory pages of the image frame to the display to refresh the display.

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Regarding claim 18, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a program embodied on a system-readable medium to refresh a display, comprising: a first sub-program to control storing at least one image frame in a memory such that content of the image frame is stored in a plurality of memory pages in the memory; a second sub-program to mark memory pages corresponding to regions of the image frame that have been updated while performing drawing operations; a third sub-program to divide the image frame into tiles representing regions of the image frame and to store each tile in a separate memory page; and at least one sub-program to access the image frame and to send only the marked memory pages of the image frame one memory page at a time to the display to refresh the display.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Applicant's Remarks***

4. Applicant's argument indicating the prior art of record does not teach "dividing the image frame into tiles where each tile is stored in one separate memory page" has merit and is cited in the reason for allowance.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	6,263,426	Abdallah et al.
U. S. Patent No.	6,173,381	Dye
U. S. Patent No.	6,008,823	Rhoden et al.
U. S. Patent No.	6,002,411	Dye
U. S. Patent No.	5,831,639	Conticello
U. S. Patent No.	5,596,376	Howe
U. S. Patent No.	5,486,876	Lew et al.

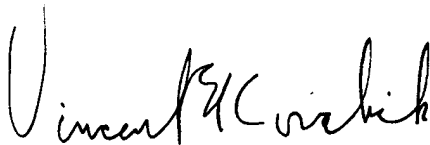
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*Responses*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E Kovalick whose telephone number is (571) 272-7669. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Vincent E. Kovalick  
March 18, 2005



BIPIN SHALWALA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600